

IN THE CLAIMS

Claims 1-9 (Canceled).

10 (Currently Amended). A packaged integrated system comprising:
an integrated circuit;
an integrated electroosmotic pump mounted on said integrated circuit;
a re-combiner; and
a package including said circuit, said pump, and said re-combiner ~~condenser~~.

11 (Currently Amended). The system of claim 10, wherein said integrated circuit is part of a first die and said integrated electroosmotic pump is part of a second die, said second die having a first side and a second side, said pump formed on said first side.

12 (Currently Amended). The system of claim 11, including microchannels to circuit cooling fluid on said second side and said second side mounted on said first die.

13 (Currently Amended). The system of claim 11, including stacking said second ~~first~~ die on said first ~~second~~ die.

14 (Currently Amended). The system of claim 13, including a third die, said third die including a re-combiner, said third die stacked on said first and second dice.

15 (Currently Amended). The system of claim 14, including a heat exchanger stacked on said re-combiner.

16 (Currently Amended). The system of claim 14, wherein said first die is coupled to said second die using copper-to-copper bonding.

17 (Currently Amended). The system of claim 10, wherein said package is a flip-chip package.

18 (Currently Amended). The system of claim 10, wherein said package is a bumpless build-up layer package.

19 (Currently Amended). A packaged integrated circuit comprising:
an integrated circuit;
an integrated electroosmotic pump;
a re-combiner; and
a bumpless build-up layer package including said circuit, said pump, and said re-combiner, said package including a build-up layer that mechanically couples said circuit, said pump, and said re-combiner.

20 (Currently Amended). The system of claim 19, wherein said integrated electroosmotic pump is formed on a first die, and said integrated circuit is formed on a second die and said re-combiner ~~condenser~~ is formed on a third die.

21 (Currently Amended). The system of claim 20, wherein said integrated circuit die is mounted under ~~on~~ said integrated electroosmotic pump die.

22 (Currently Amended). The system of claim 21, wherein said first and second dice are coupled by copper-to-copper bonding.

23 (Currently Amended). The system of claim 19, including a heat spreader coupled to said build-up layer.

24 (Currently Amended). The system of claim 20, wherein said first die includes at least one electroosmotic pump on one side and a plurality of microchannels on the other side, said microchannels to circulate cooling fluid pumped by said electroosmotic pump.

25 (Currently Amended). The system of claim 24, wherein said first die is mounted on said second die with said microchannels facing said second die.